

(12) **United States Patent**
Huss

(10) **Patent No.:** **US 6,322,336 B1**
(45) **Date of Patent:** **Nov. 27, 2001**

(54) **LUBRICATING DEVICE FOR A PLURALITY OF LUBRICATING STATIONS**

(75) **Inventor:** **Rolf Huss, Lossburg (DE)**

(73) **Assignee:** **Memminger-Iro GmbH, Dornstetten (DE)**

(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) **Appl. No.:** **09/497,621**

(22) **Filed:** **Feb. 3, 2000**

(30) **Foreign Application Priority Data**

Feb. 5, 1999 (DE) 199 04 647

(51) **Int. Cl.** **F04B 39/00; F04B 7/04; F04B 23/00; F16H 27/02; F16H 55/18**

(52) **U.S. Cl.** **417/442; 417/494; 417/502; 74/127; 74/409**

(58) **Field of Search** **417/502, 493, 417/494, 224, 326, 442, 223; 74/127, 409, 491, 128**

(56) **References Cited**

U.S. PATENT DOCUMENTS

1,776,509 * 9/1930 Hulshizer 74/127
2,039,941 * 5/1936 Terry 121/7
3,320,892 * 5/1967 Wolff 103/2

4,489,684 * 12/1984 Yamada 123/198 F
4,528,965 * 7/1985 Gibson et al. 123/502
4,632,648 * 12/1986 Goyne 417/502
4,674,964 * 6/1987 Hertell 418/60
4,944,367 7/1990 Nelson et al. 184/29
5,181,585 * 1/1993 Braun et al. 184/7.4

FOREIGN PATENT DOCUMENTS

908689 4/1954 (DE) .
40 21 557 A1 1/1992 (DE) .
0 499 810 B1 3/1995 (EP) .
1094985 5/1955 (FR) .
1502920 3/1978 (GB) .

* cited by examiner

Primary Examiner—Charles G. Freay

Assistant Examiner—Timothy P. Solak

(74) *Attorney, Agent, or Firm*—Frishauf, Holtz, Goodman, Langer & Chick, P.C.

(57) **ABSTRACT**

In a lubricating device for a plurality of lubricating stations, in particular for supplying lubricant to knitting machines, a pump device is provided that serves at the same time as a distributor device. To that end, the pump device has a piston which is provided with a control groove. The corresponding pump cylinder has an inlet and a plurality of outlets distributed over the cylinder wall. Depending on which of the outlets the control groove of the piston is made to coincide with, a corresponding lubricating station is selected. The pump device is thus a distributor device as well.

23 Claims, 6 Drawing Sheets

